A NEW *LACTARIUS* SPECIES FROM SCANDINAVIA IN THE SECTION *DAPETES*

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RÉSUMÉ: *Lactarius fennoscandicus* nov. sp. est décrite de Suède et de Finlande dans la section *Dapetes*. Cette espèce, mycorrhizique avec *Picea*, est caractérisée par un chapeau habituellement fortement zoné, avec des nuances lilas-gris mélangées d'une couleur brun-orange, par endroits verdâtre, par le latex vivement orange, changeant tardivement en rougeâtre et par les spores nettement petites.

MOTS CLÉS: *Lactarius fennoscandicus* nov. sp., section *Dapetes*, ectomycorhize, *Picea*, Scandinavie.

ABSTRACT: *Lactarius fennoscandicus* nov. sp. is decribed from Sweden and Finland as a *Picea*-associated member of the section *Dapetes*, characterized by a usually strongly zonate cap, with lilac greyish tinges mixed with brownish orange, and locally greenish, by a bright orange milk which is slowly reddening and by remarkably small spores.

KEY WORDS: *Lactarius fennoscandicus* nov. sp., section *Dapetes*, ectomyrrhiza, *Picea*, Scandinavia.

DESCRIPTION

***Lactarius fennoscandicus* Verbeken & Vesterholt, nov. sp.**

L. deterrimus affinis, a quo imprimis differt pileo saepe valde zonato umbra lilacino-griseaque, sporis parvioribus (7.5-8.0 × 6.0-6.5 µm) et cheilocystidiis rarioribus parvioribusque. Holotypus: Sweden. Siljanfors, in rich mixed forest, under Picea, acid soil, with Sphagnum and Vaccinium, 31.08.97, leg. Morten Christensen, Verbeken 97-530 (holotype GENT, isotypus C).

Pileus 32-80 mm diam., convex and very slightly depressed to infundibuliform; margin bent downwards; surface greasy, sticky, slightly viscid, strongly and densely zonate, especially in older specimens, with 4-5 broad zones composed of watery spots at the outside and some smaller zones at the inside, besides some very narrow and dense

zones at the extreme margin; center and inner zones brownish vinaceous (8E4) to dark brick-coloured (8E5) or cinnamon (6CD6) ; zones further out fawn (7E5) to clay-buff (6D4-5), greyish brown (6E4) or paler, sometimes more olivaceous, between the zones greyish pink (6B2) to greyish pink (6B3-4), or clay-buff (5C3-4, 6C3-4), locally green to blueish green and with a greyish lilac tinge as a whole. Stipe 40-110 × 10-24 mm, cylindric to subclavate, broader near the base; surface dry, soft, slightly pruinose, cotton-like, dull, pale salmon (6A2) to salmon (6A3), pinkish buff (5A3), saffron (5A5-6), greyish brown (6D3) or clay buff (5C4), sometimes whitish at extreme apex, sometimes with some ochraceous orange or dirty green spots or scrobicules. Lamellae decurrent, medium crowded to rather crowded, with a lot of short lamellulae, fragile, thin, paper-like, saffron (5A6) to peach (6A6) or ochraceous orange (6B7), turning greyish green (26E5-6) when bruised; edge entire, ochraceous (5B7). Context moderately firm to rather soft, hollow in the stipe, white to (pale) cream-coloured (4A2-3), ochraceous orange near the stipitipellis (6B7), with a central whitish part, sometimes changing to blueish green (23-24C4) under the pileipellis, not reacting with KOH, SF and $FeSO_4$; smell not particular, sometimes reminding carots; taste first mild but then bitter and bad, sometimes only slightly bitter and a bit carot-like. Latex rather scarce, bright orange, carot, changing to green, then dirty, dark greenish grey.

Spores [80,4] ellipsoid, sometimes subglobose, 6.8-*7.5-8.1*-9.3 × 5.6-*6.1-6.5*-7.0 µm, Q = 1.11-*1.22-1.26*-1.38; ornamentation composed of narrow ridges and some rounded warts, forming an incomplete reticulum; ridges sometimes composed of separately visible warts; plage not or weakly distally amyloid. Basidia 42-50(60) × 10-11 µm, subcylindric to subclavate, 4-spored. Pseudopleurocystidia very abundant, mostly not emergent, often branching and irregularly shaped, 2-5 µm diam. Macropleurocystidia extremely rare, 50-55 × 7-8 µm, subfusiform, with narrowing or moniliform apex, with needle-like content, thin-walled. Lamella-edge sterile with rare cheilocystidia; marginal cells 8-15 × 4-6 µm, subclavate or subcylindric, hyaline and thin-walled; cheilocystidia 15-25 × 4-6 µm, subfusiform to fusiform, with acutely tapering apex, with needle-like content, thin-walled. Pileipellis an ixocutis, about 50-100 µm thick, composed of rather thin (2-4 µm diam.) hyphae, which are shrinkled and gelatinizing in the upper layer.
The description is based on Heilmann-Clausen 97-119, 97-183, Verbeken 97-530 and Vesterholt 95-330 (colour codes after Kornerup & Wanscher, 1978).

Examined material and distribution

Sweden, Dalarna, Siljanfors S of Mora, in rich mixed forest, under *Picea*, acid soil, with *Sphagnum* and *Vaccinium*, 31.08.97, leg. Morten Christensen, *Verbeken* 97-530 (holotype GENT, isotypus C) and *Heilmann-Clausen* 97-119 (C, GENT). Jämtland, Fors par., Reva, at Indalsälven, 23.08.95, *Vesterholt* 95-330 (C, GENT). Jämtland, Bräcke, Gimån, in moist forest with mosses under *Picea*, 05.09.1997, *Heilmann-Clausen* 97-183 (C, GENT).

Finland, Pohjois-Häme, Aänekoski, Parantala, 21-08-86, *Vesterholt* 86-482 (C).

Hitherto only known from Sweden and Finland but probably more widespread in subboreal and boreal forests.

DISCUSSION

Prospecting the Scandinavian woods, one is immediately struck by the enormous macroscopic variety observed in milkcaps of the section *Dapetes* Fr. growing with *Picea*, as illustrated by Korhonen (1984, sub *L. deterrimus* Gröger). Some of these have caps which are more zonate and more lilac greyish than we know them to be in the typical *L. deterrimus* collections from central Europe. These differently coloured Nordic collections showed to have clearly different spores than those of *L. deterrimus*, and are proposed here as a new species as no other taxon could be traced matching the characters described here. We do not exclude, however, that besides those two *Picea*-associates, more undescribed species of this group occur in the Nordic *Picea*-forests.

Lactarius deterrimus and *L. fennoscandicus* are the only two European *Dapetes*, up to now known, growing with *Picea*. Both species seem closely related but *Lactarius fennoscandicus* is more obviously zonate while *L. deterrimus* is often totally azonate or only zonate near the margin. A greyish lilac shade all over the cap with some clearly lilac tinged zoned is typical for *Lactarius fennoscandicus*, while *L. deterrimus* has a major orange cap. It should be noted that cap — and stipe-colour are variable characters in both species, varying strongly also depending on the age of the basidiocarps. Macroscopically, it reminds also some forms of *Lactarius quieticolor* Romagn. (syn.:*L. hemicyaneus* Romagn., *L. pinastri* Romagn.). Only the microscopy can provide decisive answer (figs. 1-2): the spores in *L. fennoscandicus* (average *7.5-8.0* × *6.0-6.5* µm) are clearly smaller than those from *L. deterrimus* (average *9.5* × *7.5* µm). Cheilocystidia almost completely lack in *Lactarius fennoscandicus* while they are moderately abundant in *L. deterrimus*. The few cheilocystidia observed in *L. fennoscandicus* are distinctly smaller than in *L. deterrimus*. *Lactarius sanguineovirescens* Fillion has similar (but slightly larger) spores as *L. fennoscandicus*, but differs by the context which is changing scarlet after 5 minutes and purple after 15 minutes. Furthermore, the species is growing on acid soils, associated with *Pinus* (Fillion, 1989).

Because in many descriptions of *Dapetes*-taxa the distinctive characters of closely related taxa are not emphasized and because an illustrated comparison of the spores, which is often their visiting-card, is lacking, we provide here spore-drawings of the accepted taxa in northern and western Europe (fig. 2a-h).

A coloured photograph of *Lactarius fennoscandicus* will be published in Fungi of Northern Europe, vol. 2 (in prep.). Some plates of *Lactarius deterrimus* given by Korhonen (1984: 108-109; labelled 2758, 4882) most probably refer also to the species described here.

REFERENCES

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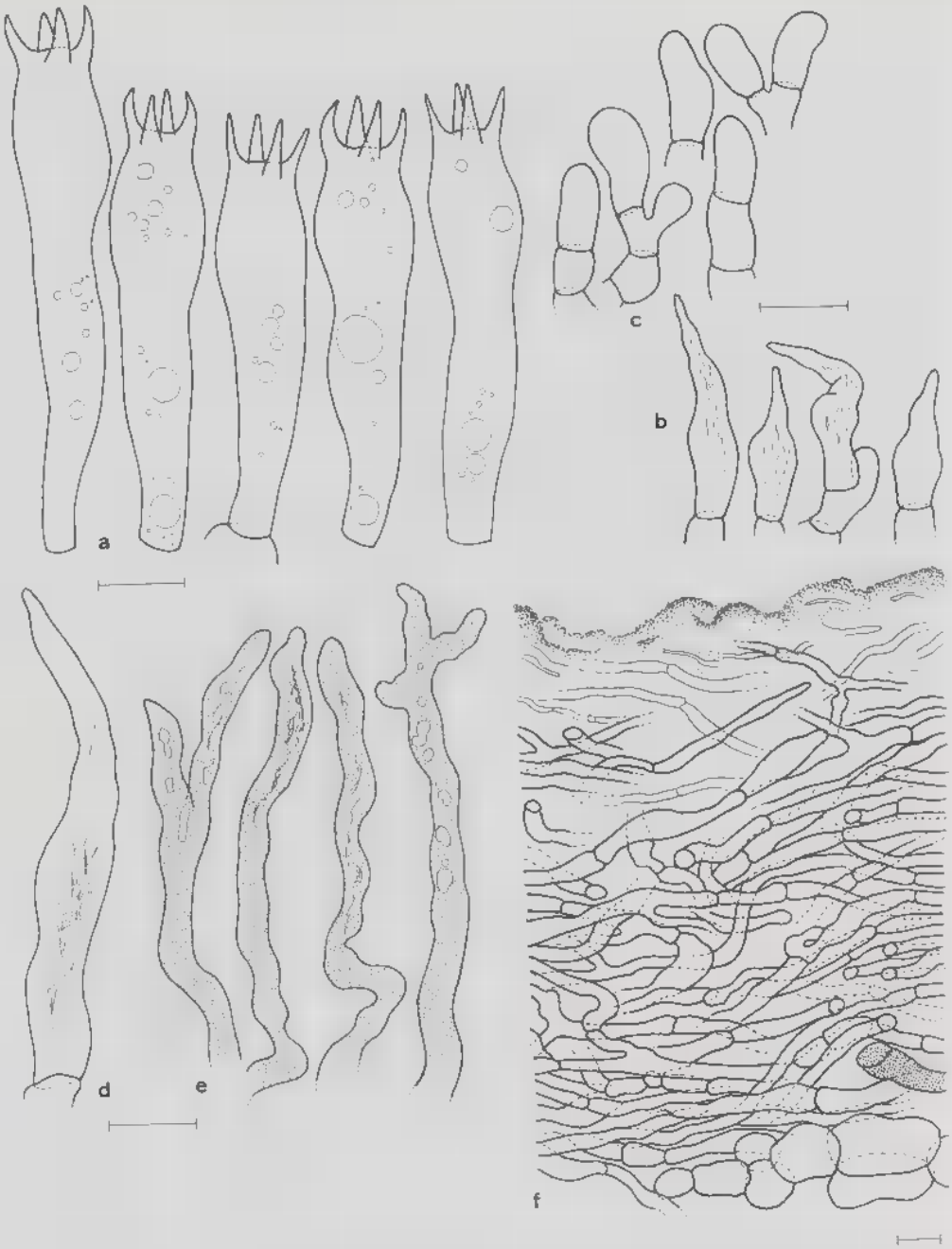

Fig. 1. *Lactarius fennoscandicus*. a. basidia, b. macrocheilocystidia, c. marginal cells, d. macropleurocystidium, e. pseudopleurocystidia, f. section through the pileipellis, halfway the radius (all from type; bar = 10 µm).

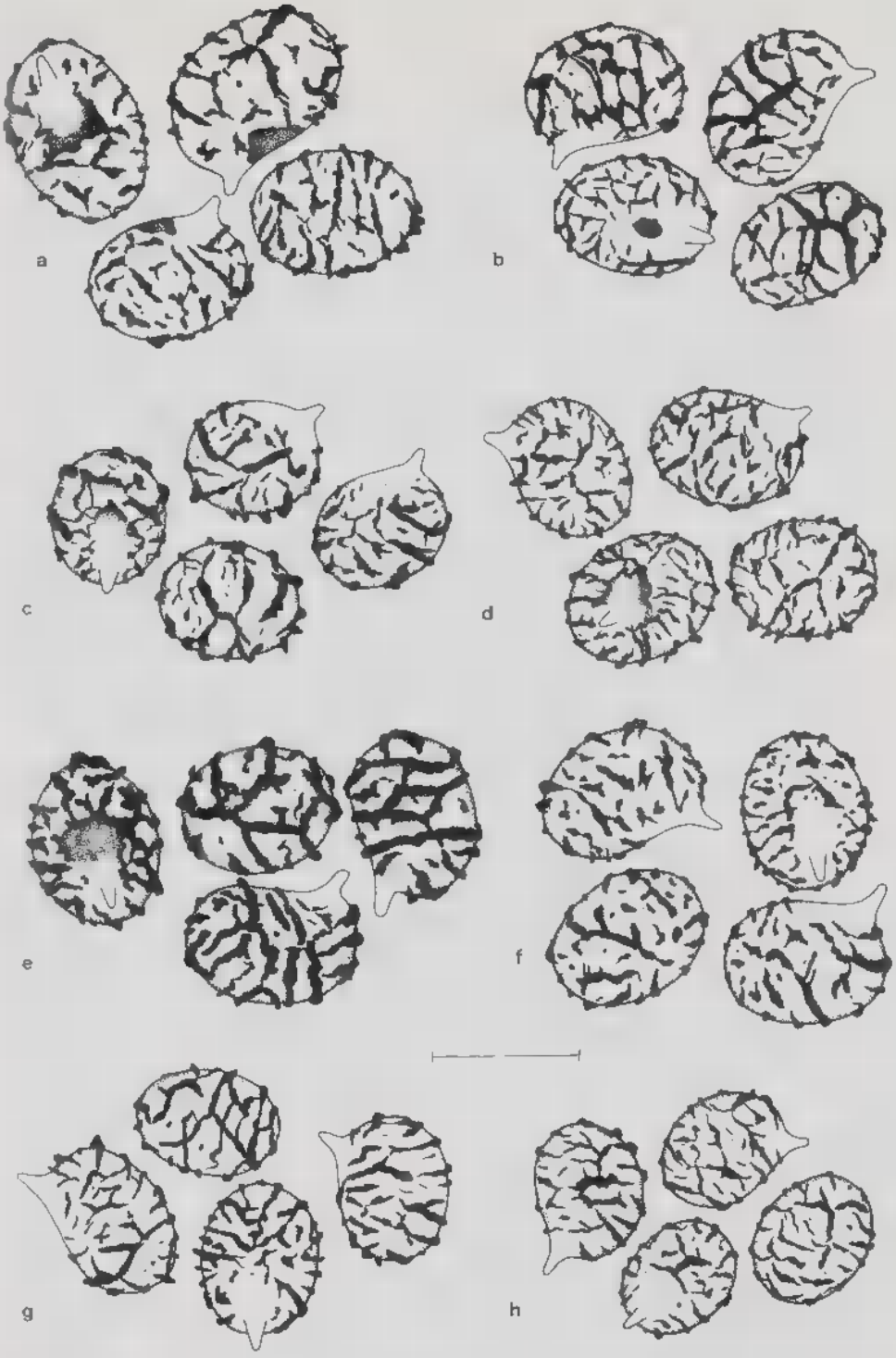

Fig. 2. Spores. a. *Lactarius salmonicolor* (*Walleyn* 570), b. *L. deliciosus* (*Van de Kerckhove* 330), c. *L. sanguifluus* (*Walleyn* 555), d. *L. semisanguifluus* (type), e. *L. quieticolor* (*Walleyn* 425), f. *L. deterrimus* (*Verbeken* 93-65), g. *L. sanguineovirescens* (isotype), h. *L. fennoscandicus* (type).